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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,992	01/15/2002	Yuying Wu	31721-17778	2719

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Washington, DC 20043-9998

EXAMINER

RAHLL, JERRY T

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 09/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,992

Applicant(s)

WU ET AL.

Examiner

Jerry T Rahll

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-8 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings submitted have been reviewed and determined to facilitate understanding of the invention. The drawings are accepted as submitted.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The pressing mechanism described in claim 2 is not described in the specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-2 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,066,088 to Davies et al. in view of U.S. Patent No. 6,356,377 to Bishop et al.

7. Davies et al. describes a light signal delaying device having a linear guide rail (64), a pair of stages (52, 56) engaged with the guide rail, an optical fibers on a fixed stage (52), a pair of optical fiber collimators (60, 62), a pair of reflecting surfaces (58) mounted at 90° , with an incidence angle and an exit angle of 45° with respect to the incidence light and exit light, on a moveable stage to each other and an actuator (66) for moving the stage having the reflecting surfaces (see Figures 1-2 and Columns 3-4). Davies et al. does not disclose the reflecting surfaces as mirrors.

8. Bishop et al. describes a light signal delaying device having a linear guide rail (19), a pair of stages engaged with the guide rail, an optical fiber holder, a pair of reflecting mirrors (16a) mounted at 90° to each other, with an incidence angle and an exit angle of 45° with respect to the incidence light and exit light, and an actuator (21-24) for moving the stage having the reflecting surfaces (see Figures 1a-1b and Column 2).

9. Davies et al. and Bishop et al. are analogous art because they are form the same field of endeavor of optical signal delaying. At the time of invention, it would have been obvious to one of ordinary skill in the art to use the mirrors of Bishop et al. in place of the prism structure of Davies et al to reduce weight to reduce wear on the motor. Therefore, it would have been obvious to combine Davies et al. with Bishop et al. to obtain the invention as specified.

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10. Davies et al. and Bishop et al. do not specifically describe a V-groove holder mounted on one of the stages. However, Davies et al. and Bishop et al. do describe the optical fibers mounted, but are mute as to the manner of mounting. Therefore, it would have been obvious to one of ordinary skill in the art to use any well-known method of mounting, such as V-grooves.

11. Davies et al. and Bishop et al. do not specifically describe the reflecting mirrors as having a metal film or a multilayer dielectric film. Davies et al. and Bishop et al. do describe the reflecting surface, but are mute as to the type of material used. Therefore, it would have been obvious to one of ordinary skill in the art to use any well-known material for the reflecting surface, such as a metal film or a multilayer dielectric film.

12. Davies et al. and Bishop et al. do not specifically describe the optical fibers as being single mode, mode-dispersion shift or polarization preserving fibers. Davies et al. and Bishop et al. do the use of optical fibers, but are mute as to the type of fiber used. Therefore, it would have been obvious to one of ordinary skill in the art to use any well-known type of optical fiber, such as single mode, mode-dispersion shift or polarization preserving fibers.

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al. and Bishop et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,855,744 to Halsey et al.

14. Davies et al. and Bishop et al. describe a light-signal delaying device as discussed above. Davies et al. and Bishop et al. do not specifically describe the actuator as being a ball-screw mechanism. However, Davies et al. describes the actuator having a drive rod (see Column 4 Line 50). Halsey et al. describes a drive rod as being a ball-screw mechanism (see Column 14 Lines 19-31)

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15. Davies et al., Bishop et al. and Halsey et al. are analogous art because they are form the same field of endeavor of controlling lateral movement. At the time of invention, it would have been obvious to one of ordinary skill in the art that the drive rod of Davies et al. is a ball-screw mechanism as described by Halsey et al. Therefore, it would have been obvious to combine Davies et al., Bishop et al. and Halsey et al. to obtain the invention as specified in the claims.

Allowable Subject Matter

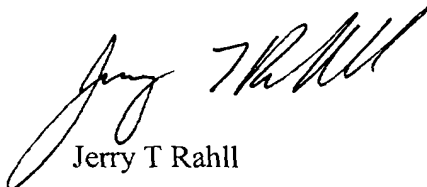
16. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 3 describes the use of GRIN lenses with a pitch of 0.25 as the optical collimators.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T Rahll whose telephone number is (703) 306-0031. The examiner can normally be reached on M-F (8:00-5:30), with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Jerry T Rahll



AKM ENAYET ULLAH
PRIMARY EXAMINER